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THE KINTZEL
DRESS CUTTING
SYSTEM

1896



BY
A. G. KINTZEL
PHILADELPHIA, PA.

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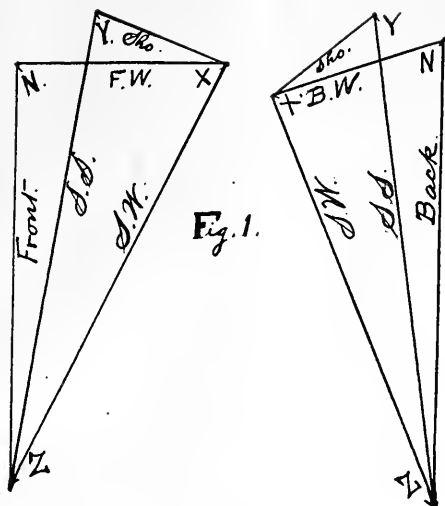
A. G. KINTZEL

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The Kintzel System.

The Kintzel System for dress cutting herein described is a new idea of taking measures and a new way of drafting. This system is based upon the Bitrigonal or double angle as shown by Fig. 1. Tailors all use square and circular measures. We claim to be the first to use these angles as a basis. We use Trigonometry and Geometry combined for the base of our mathematical calculations. We have been able to overcome many difficulties found in making a perfect fitting garment. We use a curved chart or templet to make all curved lines. This templet will cut any size. In fact this system has no limit as to size. It will cut any size waist, big or little, from 10 to 100 inches if necessary. It is all whole measures and very simple. Very easy to learn. Any person can learn this system as it is expressly arranged so as to be easily understood. It requires but few instructions to be understood by a child. It will prove a blessing to many families as well as to all the dress wearing public.

Measures to be Taken for this System.

- 1.—H. Hip. Around the hip.
- 2.—W. Waist. Around the waist.
- 3.—B. Bust. Around the bust.
- 4.—U. A. Under Arm. Waist to arm.
- 5.—Back. Back. Waist to neck on back.
- 6.—S. S. Shoulder Strap. At neck.
- 7.—S. W. Shoulder at arm to waist.
- 8.—B. W. Back Width. Back neck to arm.
- 9.—Sho. Shoulder. Neck to arm.
- 10.—B. C. Back Cross. Center back to arm.
- 11.—Front. Front. Neck to waist.
- 12.—S. S. Shoulder Strap at neck.
- 13.—S. W. Shoulder at arm to Waist.
- 14.—F. W. Front Width. Neck front to arm.
- 15.—Sho. Shoulder. Neck to arm.
- 16.—F. C. Front Cross. Chest front to arm.
- 17.—D. Darts. From waist front up.
- 18.—N. Neck. Around the neck.

How to Take Measures.

(Fig. 2, will be your guide for taking measures and drafting. So you should first become familiar with the lines and letters of Fig. 2).

First.—H. or Hip. Measure around the hip about 5 inches from the belt or waist line, not tight (F to H).

Second.—W. or Waist. Measure around the waist at the point where a string will tie best without sliding up or down (Z to Z).

Third.—B. or Bust. Measure around the bust under the arms and over the fullest part of the bust. Then measure over the chest to see if there is any difference. If chest is much less the under arm must be curved in at the top on the front draft at under-arm-seam (as C to B).

Fourth.—U. A. or Under Arm. Measure the under arm from waist line to under the arm, but do not make the measure too long (as L to S on under arm).

Fifth.—Back. Measure from bone on back of the neck to waist (as N to Z).

Sixth.—S. S. Measure from the shoulder seam at the neck to the waist at the back (as Y to Z).

Seventh.—S. W. Measure from shoulder seam at the arm to the waist at the back (as X to Z).

Eighth.—B. W. Measure from bone at the back of the neck to the arm hole at the shoulder seam (as N to X).

Ninth.—Sho. Measure from neck to arm hole seam down the shoulder seam (as Y to X).

Tenth.—B. C. Measure from back line to where back curve and arm hole should meet (as D to C).

Eleventh.—Front. Measure from neck down to waist line in front (as N to Z).

Twelfth.—S. S. Measure from centre of front at the waist to the shoulder seam at the neck (as Z to Y).

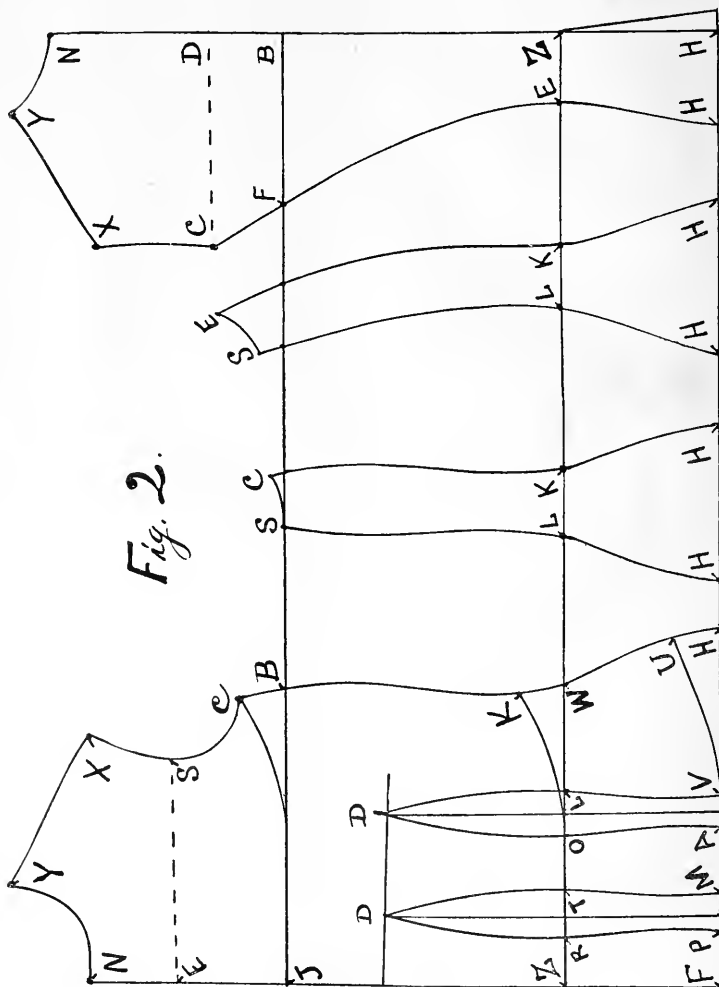
Thirteenth.—S. W. Measure from front at waist line to shoulder seam at arm (as Z to X).

Fourteenth.—F. W. Measure from neck front to shoulder seam at the arm (as N to X).

Fifteenth.—Sho. Measure shoulder from arm hole seam to neck seam on shoulder seam (as X to Y).

Sixteenth.—F. C. Measure from front line at half way between neck and bust line to the nearest part of the arm hole seam (as E to S).

Seventeenth.—Darts. Measure height of darts above waist line to within one inch of the fullest part of the bust.



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How to Draft a Plain Waist.

First.—Take a plain sheet of paper 24 x 36 inches and draft according to the following directions :

Draw a line for hip measure one inch from lower edge of paper all the way across the paper.

Second.—Draw waist line 5 or 6 inches above, all way across the paper, 5 inches is the usual distance from hip to waist line.

Third.—Draw bust line above waist line the distance your under arm measure calls for.

Fourth.—Draw back line 2 inches from edge of the paper all way through N and Z across the paper. Make a dot on this line the length of your back from waist line at Z (as Z to N). Back of neck will be at N.

Fifth.—Measure your S S from Z to Y making a curved line 2 to 3 inches from back line to be crossed by another curved line later.

Sixth.—Measure your S W from Z to X about 6 to 8 inches from back line ; make a curve to be crossed by another curve later.

Seventh.—Measure your B W from N to X and cross the S W curve with a curve, the point where these two curves cross, dot ; this will be at X.

Eighth.—Measure your shoulder from X to Y, cross your S S curve, with a curve, and dot where curves cross. This will be at Y.

Ninth.—Measure your B C from D to C and dot. Then measure from Z to K on the waist line the same distance and dot, and draw a line from K to C and half way to X (this line will not always point direct to X).

Tenth.—Measure arm hole needed from X to C and dot. This will give C, or where arm and back curves should meet.

Eleventh.—Measure from Z to E the width you wish the back to be at the waist and dot at E. Use the chart from C to E to H for back curve by placing W on the chart at the waist line at E. Use the chart to curve neck, shoulder and arm (as marked on the chart). Lay your rule from Y to Z and mark only from Z to hip line for spring of back. Thus completing back piece.

Twelfth.—Place your chart (marked side body back) to back already drawn and measure from E to C to find K to E on side body. Lay chart on waist line at K nearly straight with line K to C (on back) mark from E to K to H. (This will make side body a little too long, but this is better than too short.) Always mark your goods to be matched at the waist line as they will match at bust and hip if properly matched at the waist.

Thirteenth.—Measure from B to F on bust line of back already drawn to see how much bust line you have used. Then subtract this from $\frac{1}{4}$ of full bust measure and divide the balance into two equal parts for bust line on side body and under arm. Then take distance from Z to E at waist (whatever you have made it) from $\frac{1}{4}$ your waist measure and divide the balance into two equal parts for waist line on side body and under arm. Measure to the left of line E K H at bust and waist lines and dot according to your equal parts obtained and mark with chart line S L H. (S is always about $\frac{1}{2}$ inch above bust line.)

Fourteenth.—Curve top of side body from S to E. This completes the side body piece.

Fifteenth.—Place the chart for U A back one inch from side body at H and about two inches on bust line from side body. Then C to K to H is marked with chart placing the B on bust line (marked back of under arm). C is always about $\frac{1}{2}$ inch above bust line.

Sixteenth.—Make under arm the same on bust line as side body and the same on waist line as the side body. Mark with the chart from S to L to H and curve top of under arm S to C.

Seventeenth.—Measure about fifteen inches to left of U A on the waist line and dot (at Z). Mark line N J Z F (or all the way across the paper).

Eighteenth.—Measure front from Z to N and dot your front length. This will be at the neck front at N.

Nineteenth.—Measure your S S line from Z to Y and make a curve about two inches long about three inches from front line to be crossed by another curve from X later.

Twentieth.—Measure your S W line from Z to X about seven or eight inches from front line at X, make a curve about two or three inches long at X to be crossed by a curve from N later.

Twenty-first.—Measure your F W from N to X making a curve crossing curve made by S W, dot where curves cross making X.

Twenty-second.—Measure shoulder from X to Y crossing curve made by S S, dot where curves cross. This will be at Y.

Twenty-third.—Measure F C from E to S and dot at S. (This measure is taken $\frac{1}{2}$ way from neck to bust line.)

Twenty-fourth.—Curve neck from N to Y with chart and shoulder from Y to X with chart.

Twenty-fifth.—Make bust line on front draft $\frac{1}{4}$ full bust measure and dot at under arm seam at B. Make waist from Z to W the same as J to B and dot at W.

Twenty-sixth.—Make a line above waist line to mark the height of darts at D D.

Twenty-seventh.—When two darts are used, the second dart is usually made $\frac{1}{2}$ -inch higher than the first dart.

Twenty-eighth.—Center of front dart is marked by a line from dart line parallel with the front line from 2 to 3 inches in from the front line, according to bust measure.

Twenty-ninth.—Center line of second dart is parallel with front line 4 to 6 inches from front line, according to bust measure.

Thirtieth.—Width of darts at waist from R to T and O to L will be regulated by the following rule: $\frac{1}{2}$ inch more out at the second dart than at the first dart, for one dart only, not more than $2\frac{1}{2}$ inches, the balance to be taken out at the under arm seam or a curved front.

Thirty-first.—Lines R to P, T to M, O to A, and L to V are straight lines on a plain waist.

Thirty-second.—Measure from Y to O and make Y to K the same distance. This will raise under arm from W to K and B to C.

Thirty-third.—C to J becomes the bust line instead of B to J, and C to K the under arm seam instead of B to W.

Thirty-fourth.—H raises to U making K to U the hip instead of W to H. Use chart from C to K.

Thirty-fifth.—The dots at X, S and C regulates the curve of the arm made by the chart. H to U is the same distance as W to K.

Thirty-sixth.—V to U is found by adding all measures found on the hip line on back, side body, under arm and front (F to P and M to A) and subtracted from $\frac{1}{2}$ full hip measure; the balance will be V to U.

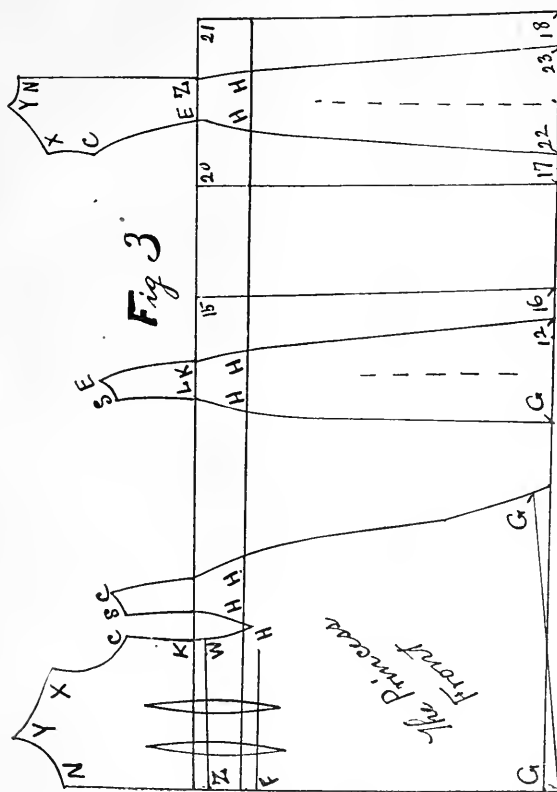
Thirty-seventh.—C to K may be a straight line but if curved by chart will give a better fit. (This curve is marked on the chart.)

Thirty-eighth.—K to U is made by hip curve on chart (U to V being the only part of skirt to be regulated).

Thirty-ninth.—Line N to F or front line must always be $1\frac{1}{2}$ inches from fold line or edge of goods for single breasted, and 3 to 6 inches for double breasted.

Fortieth.—The bias under arm is made by placing a dot on curved line half way from center of second dart to K and marking with the chart from top of dart to hip line, placing letter B on the chart on bust line above.

Forty-first.—Make waist line the same on bias dart as L to K on plain waist and V to U the same as on plain waist, C to U must always be the same to correspond with S to H on under arm piece.



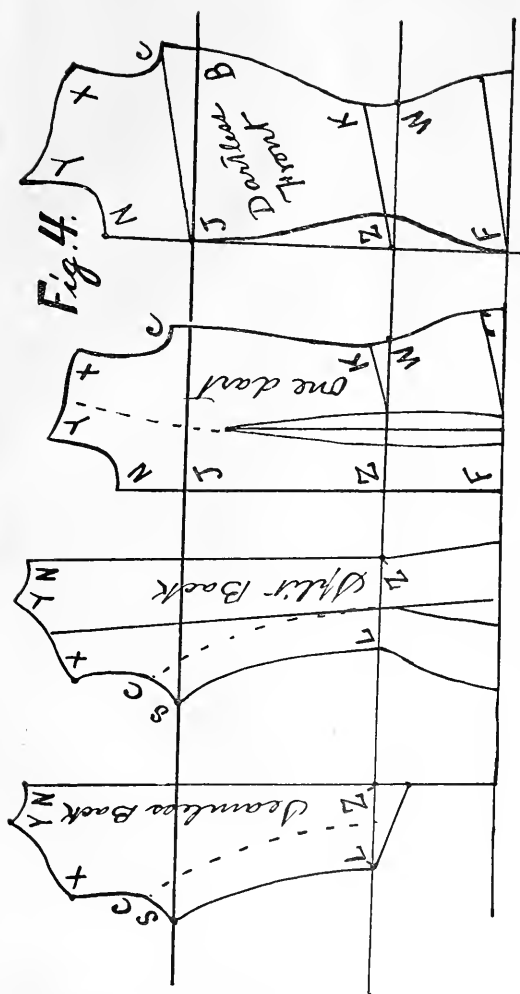
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The Princess.

Draft back and side body for plain waist to the hip line as shown by Fig. 2. Then finish back and side body to the floor as shown by Fig. 3. The hip curve on the back should curve down about 12 inches from E, then straight to the floor. The back spring should curve less to 9 inches below Z, then straight to the floor. The bottom from No. 22 to 23 should be 1-10 of the whole width of the skirt. If skirt is 5 yards or 180 inches the back at the floor will be 18 inches. If the skirt is 3 yards or 108 inches the back at the floor will be 10 8-10. Dotted lines show the grain of goods. Lines 17, 20 and 18, 21, show where to add goods for fullness.

The side body (Fig. 3) to be finished to the floor by curving front 9 inches below L, then straight to the floor on grain of goods. The back should curve slightly to 9 inches below K then straight to the floor. The side body should be the same at the floor as the back (1-10 whole skirt measure on floor (G to 12). The line 15 to 16 shows where to add for fullness.

To draft the front. After the front line is drawn F to N, mark extra waist and hip lines Z to W and F to H (as shown by Fig 3). One inch below the lines used for side body and back. (1 inch for bust measures 30 to 42 and $1\frac{1}{4}$ inches for all above 42.) Then draft your front Z, N, Y, X, C, K, W, and H, the same as for plain waist. This will draw your front down to meet your under arm at arm hole C and S. Fig. 3, instead of raising under arm as would have to be done with plain waist in Fig. 2. Then draft your under arm touching at hip line used by side body and back the same as for plain waist. This will make your under arm and front meet correctly at C and S. Then measure your front from F to G, then G to G 3-10 of the whole skirt width (Fig. 3). Then draft from under arm back at H down to G, curving out for 12 inches below waist line and curving slightly in near to G. For extra large hip both hip curves on under arm seam may be increased. You can draft the under arm piece by drafting the front first (S to H) instead of the back first (as C to H, Fig. 3). You have the waist and bust measures. So measure to the right instead of the left as in plain waist. The chart making the line from bust to hip saves you the trouble of much measuring and calculation.



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How to Draft a Split Front.

Draft a single dart front as is shown in Fig. 4, and continue from top of dart to shoulder seam. This may be any where you desire your seam to strike the shoulder. Make a draft and cut apart where dotted line shows on Fig. 4. As we make all patterns to sewing lines only. This saves drafting double. You will find it much better to cut your own seams on the goods, for you can not cut close enough to a pattern without cutting the pattern. You will also find it easy to match stripes and plaids, when patterns are cut to sewing line only. The seams on most patterns get in the way when matching stripes and a trial by our method will convince you. In cutting your own seams you know just how much seam you want when you are making up, for what you call a seam others would take more or less. So whatever width seam you cut you must sew the same or you will not have a perfect fit.

The Dartless Front.

To draft a dartless front you should first draft a plain waist down to waist line except the darts as Fig. 2 shows. Then take the difference between $\frac{1}{4}$ bust measure and $\frac{1}{4}$ waist measure. This difference must come out by a curved front and a curved under-arm seam. If $3\frac{1}{2}$ is the difference $1\frac{1}{2}$ will come out at the curved front and 2 inches at the under-arm seam. Always take $\frac{1}{2}$ inch more out at under-arm seam than at front. Use the chart, lay B on bust line at J, where it is marked (Bias dart). And curve to waist line as much as your front is to be curved at waist. Then use hip curve from waist to F at the front, after curving the front, measure how wide your front is to be on the waist line from this curve, and dot where your under arm seam is to cross waist line. Then use chart, lay B (marked back of front) on bust line at C and curve to waist, cutting out what is required at the waist.

Then find what you should have from F to U on hip line and dot. Then finish your under-arm seam from waist to U with hip curve. Match at the waist always. Any curved front can be made by bias dart curve on the chart from bust to waist and hip curve from waist to hip.

How to Draft a Split Back.

Draft your back as for plain waist making all but the back curve as C to E, Fig. 2. When you have your chart on the paper drawing E to H you should make a dot at F. Draw a straight line from the shoulder half way from X to Y or a little nearer Y down through E to the hip line as in Fig. 4. This line will be the back of your split side body. Measure from B to F to see how much bust line you have used.

Then quarter bust minus B to F and divided by two will give what side body and under arm should be on bust line for plain waist. Then dot to the left of F on bust line what your side body should be less $\frac{1}{2}$ inch, this $\frac{1}{2}$ inch to be added to under arm at the bust line (at C on under arm piece Fig. 2, and $\frac{1}{4}$ of the waist measure less your back taken (Z to E) and divided by two will give you side body and under arm at waist. Measure to the left of back at waist from E how wide your side body should be and dot on waist line. Draw curve for split side body with the chart from bust to hip line, let this curve extend $\frac{1}{2}$ inch above bust line and dot for the top curve. Then curve with arm hole curve on chart from top of side body curve to C on the back. Match at the waist as this side body may be a little too long, use tracing wheel and trace back and side body separate as one laps over the other as drafted here. Always retain your original draft.

The under arm is drafted the same as for plain waist except the $\frac{1}{2}$ inch to be added from side body at C. Then C should be raised about $\frac{3}{4}$ inch above bust line to meet the $\frac{1}{2}$ inch from S to bust line on side body which will raise to $\frac{3}{4}$ when sewed together. The side body looks shorter but this is because it slants more when drafted with the back. Be sure to always match at the waist as you can see by these different drafts that the seam slides up and down and gets longer or shorter, as it slants from right angle with the waist line. Many make this mistake by matching on the bust line.

A Seamless Back.

A seamless back is only drafted down to the waist with a drop in the back to a point from under arm piece. To draft the seamless back look at Fig. 4, you will see that the curve C F E is not needed, but you must dot C F and E. So that you can add your side body to the back. Add to left of F what your side body would be on bust line and dot. Add to left of E on waist line what your side body should be on waist line and dot. Then curve with chart from dot to dot making the curved line the same length as L to S on side body, dot at S for arm hole curve which may come a little above or a little below bust line. If you get this curve too long it will not fit your under arm piece. Use chart (arm hole curve) from top of this curved line to C on the back. Cut on fold of goods double and match at the waist as you are not sure of a match at arm hole. This waist may be slashed or pointed below the waist line.

The Corset Darts

First.—The Corset cut dart is drafted by the following rule, $r-16$ of whole bust measure or $\frac{1}{4}$ of bust measure on front. Thus if 36-inch bust $\frac{1}{4}$ will be 9 inches for front, $\frac{1}{4}$ front will be $2\frac{1}{4}$ for distance of front dart-top from front line. Second dart will be $\frac{1}{2}$ bust on front plus 1 inch. This will be $\frac{1}{2}$ front = $4\frac{1}{2}$ inches plus 1 inch = $5\frac{1}{2}$ inches from front line at top of second dart.

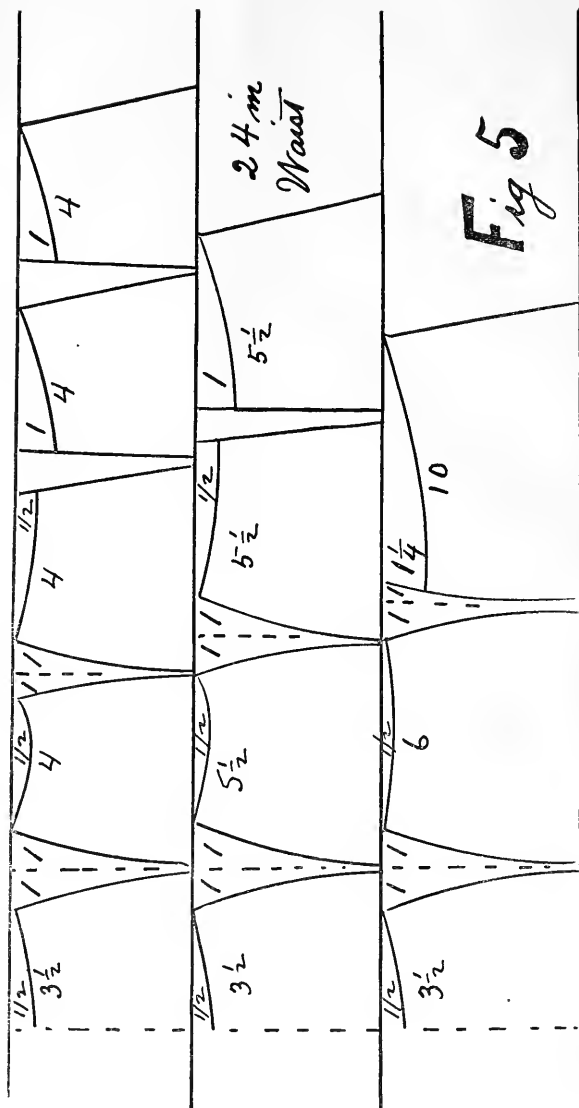
Second.—This will give $1\frac{1}{4}$ inches for distance from front line to first dart at the waist and $1\frac{1}{4}$ inches between the darts. The front dart should be 1 inch wide at hip line.

Third.—If 32 is the bust $\frac{1}{4}$ will be 8 inches, $\frac{1}{4}$ of front will be 2 inches, the distance for front dart-top from front line, and $\frac{1}{2}$ bust front = $4 + 1 = 5$, the distance for second dart.

This will give 1 inch for distance from front line to first dart at the waist and 1 inch for distance between darts at the waist.

Fourth.—The second dart should not be less than 1 inch wide at the hip line. Use the chart as marked D D for front of both darts, for the back of first dart use chart marked O (back first corset), and for back of second dart use chart marked O (back second corset).

Fifth.—For extra full busts use O (back second corset) for the back of both darts. Curve your under arm seam as on plain waist. The bias dart can be used with the corset cut darts, the same as bias dart with the plain waist. This style dart makes a very good fitting dart, but requires care in sewing up properly.



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To Measure for Skirts.

First.—Take waist measure around the waist.

Second.—Take front length from belt to beginning of instep.

Third.—Take back length from belt to floor.

For Plain Skirts.

First.—The front is always $\frac{1}{6}$ of waist measure at top. Lay on fold of goods and cut double. (For extra large hips it may be necessary to allow a curve at the hips.)

Second.—The top of the back gore should always occupy 2 inches on the belt line. (In waist measures of 18 to 30 inches and $\frac{1}{6}$ of an inch more for each inch on waist measure above 30 inches.) The back should be three times the space it is to occupy, for fullness.

Third.—Take what you have obtained for the front and what the back occupies on the belt line from $\frac{1}{2}$ the waist measure and divide the balance by the number of gores on the side to find how much each side gore is to be made. Thus by examples :

Fourth. *Example.*

Seven Gored Skirt.

2) 24 waist.
 3) 12 half waist
 Front $\frac{4}{3} = \frac{1}{6}$ waist
 8 Balance
 2 back taken
 No. g. 2) 6 Balance
 3 each gore

Example.

Nine Gored Skirt.

2) 36 waist
 3) 18 half
 Front $\frac{6}{3} = \frac{1}{6}$
 12 Balance
 3 back taken
 No. g. 3) 9 Balance
 3 each gore

Fifth.—The front at the bottom is always $\frac{1}{2}$ the width of the goods. This is cut double on the fold. Take the full width of the goods for the front to avoid seams. The side gores should be at least two inches wider than the front at the bottom. The back should be at least six inches wider than the front.

Sixth.—The top of the front should be curved out $\frac{1}{2}$ inch from fold (or center of front to the seams).

Seventh.—The top of the side gores should be curved out $\frac{1}{2}$ inch from center of the gore to the seams.

Eighth.—The back if not split should be curved out one inch from fold or center of back to the side seams; if split it should be curved out one inch from center of back to the seam at side gore.

Gored Skirts.

Gored skirts of five, seven, nine or more gores.

Fig. Five shows the top of one half of a five, seven and nine gored skirt twenty-four inch waist. The dotted lines to the left show the front line where the front is to be cut on fold double. The front should be $\frac{1}{6}$ of the whole waist measure less $\frac{1}{2}$ inch. The rule with some is $\frac{1}{6}$ of the waist but as we cut to sewing line only our rule is $\frac{1}{2}$ inch less. Thus—

Example.

Whole waist measure,	24 inches
half “ “	$\frac{12}{12}$ “
$\frac{1}{6}$ “ “ less $\frac{1}{2}$ in.	$\frac{3\frac{1}{2}}{3\frac{1}{2}}$ “
Balance,	$\frac{8\frac{1}{2}}{8\frac{1}{2}}$ “
$\frac{1}{3}$ “ “ for fullness,	8 “
No. gores, 4)	$\frac{16\frac{1}{2}}{16\frac{1}{2}}$ “
Each gore,	$\frac{4}{4}$ “

Thus—Whole waist measure,	24 inches
$\frac{1}{2}$ “ “	$\frac{12}{12}$ “
$\frac{1}{6}$ “ “ less $\frac{1}{2}$ in.	$\frac{3\frac{1}{2}}{3\frac{1}{2}}$ “
Balance,	$\frac{8\frac{1}{2}}{8\frac{1}{2}}$ “
$\frac{1}{3}$ “ “ for fullness,	8 “
No. gores, 3)	$\frac{16\frac{1}{2}}{16\frac{1}{2}}$ “
Each gore,	$\frac{5\frac{1}{2}}{5\frac{1}{2}}$ “

Thus—Whole waist measure,	24 inches
$\frac{1}{2}$ “ “	$\frac{12}{12}$ “
$\frac{1}{6}$ “ “ less $\frac{1}{2}$ in.,	$\frac{3\frac{1}{2}}{3\frac{1}{2}}$ “
Balance,	$\frac{8\frac{1}{2}}{8\frac{1}{2}}$ “
$\frac{1}{3}$ “ “ for fullness,	8 “
	$\frac{16\frac{1}{2}}{16\frac{1}{2}}$ “
$\frac{1}{4}$ “ “ one gore,	6 “
for back,	$\frac{10\frac{1}{2}}{10\frac{1}{2}}$ “

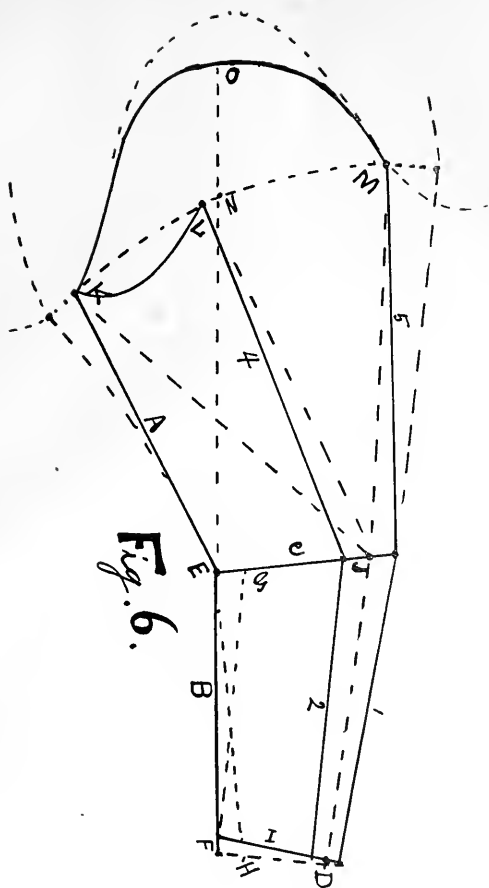
NOTE.—No gore should be more than $\frac{1}{4}$ whole waist measure, except the back which requires fullness.

Fig. Five shows that we always dot out one inch from the top of gore when we want a curve to get the straight line to the floor. Then we curve this one inch off with the dart curve on the chart.

When the back is not split, cut your back on fold of goods. That is place the fold where center of the back comes. Thus cutting the back in one piece.

This will make your skirt with an even number of gores. Thus, one front, two side gores each side, and one back would be a six-gored skirt. Cut the bottom. Thus, one-half the width of the goods for the front; that is, one-half the front being cut on fold line, the front takes the full width unless the goods are over 44 inches. For nine gored skirt you have four gores on each side besides the front. Thus, 4 yards or 144 inches, half 72 inches. Say you have 27-inch goods, $13\frac{1}{2}$ would be your front at the floor for the one-half; balance $58\frac{1}{2}$ inches for four gores $14\frac{1}{2}$ each, but you can take two inches off each of the back gores and add 2 inches to each of the side gores, making them $16\frac{1}{2}$ each, and making the two back gores $12\frac{1}{2}$ each, or cut the back gore on the fold making an eight gored skirt. Odd numbers will always make the best fit as they give bias to straight on every seam except the back which does not show the double bias so much as would be the case on the sides next to the back.

NOTE.—The skirts just described are full skirts. Instead of adding $\frac{1}{3}$ whole waist measure, $\frac{1}{3}, \frac{1}{4}$ or 6 will do according to the fullness you wish.



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How to Take Measures for Sleeves.

First.—Measure from elbow to wrist.

Second.—Measure around at the elbow closing the arm to see what room you must allow for fullness to suit the wearer.

Third.—Measure the wrist by measuring around the hand with the thumb closed to see what size hole the hand will go through.

Fourth.—Measure from elbow to arm hole where the back seam joins the arm hole seam.

Fifth.—Measure around the arm near the shoulder—pressing the arm to the side to make it as big as possible or it will be too tight in some attitudes.

Sixth.—Measure from elbow to top of shoulder where the shoulder seam strikes the arm hole seam.

Seventh.—Measures should be taken very correctly for no system will correct your mistakes. To be sure, you should measure over the second time to see if you can get the same measure twice alike.

How to Draft a Sleeve Lining.

Draft from Fig. 6. On the chart find the holes through which dot with pencil. Then draw angle line A and line B. Mark E at the angle and place your square on line B. The angle at E move back at F $\frac{1}{2}$ inch to H on the dotted line and mark line C. Then measure from E on line C $\frac{1}{2}$ what your arm measure is at the elbow and dot at J. From the dot at J measure down to D at the wrist making a curve at D. Then measure from F to D $\frac{1}{2}$ your wrist measure and dot where you strike the curve made from J to D. This will be at D (as on Fig. 6). Lay your square on line B with the angle at F. Keep your square fast at D and move in $\frac{1}{2}$ inch from E to dotted line. Then mark line I from D to F your proper angle. Then dot $\frac{1}{2}$ inch in from D and $\frac{1}{2}$ inch out from D on line I. Then dot one inch on each side of J on line C and mark line 1 and 2. The dotted lines touching line B show how we get the angle for lines C and I. This finishes the fore-arm.

Then take your measure from shoulder to elbow and placing one end of your tape or rule at dot J, make a curved line from K to L to M. Then K will be where this curve strikes line A. Then measure $\frac{2}{3}$ your arm-hole measure. If 15 one-third will be 5. Then from K to L is 5 inches dot at L. Then 5 from 15 leaves $10 + 1 = 11$. (We always add one inch for what is lost in the curves.) Then measure from K to M 11 inches or whatever is left from your under piece + 1 inch. This will be at M on the dotted curve. Then draw line 4 from L to meet line 2. Then draw line 5 from M to meet line 1. (The three dotted lines running from J to L, K and M, show that J is the same distance from each.) Measure back from M to N and dot at N $\frac{1}{2}$ your arm hole measure. Then draw a dotted line from E to N to O. Then E to O is your measure from shoulder top to elbow + one inch. Dot at O and curve from O to M with chart (marked under arm back). Mark from O to K with chart (marked shoulder curve). Mark from K to L with chart (marked neck front). This completes the sleeve lining. The dotted lines outside of this draft show where to add for fullness to shoulder or for puffed sleeves, curve your angles at the line C so as to not show corners when made up.

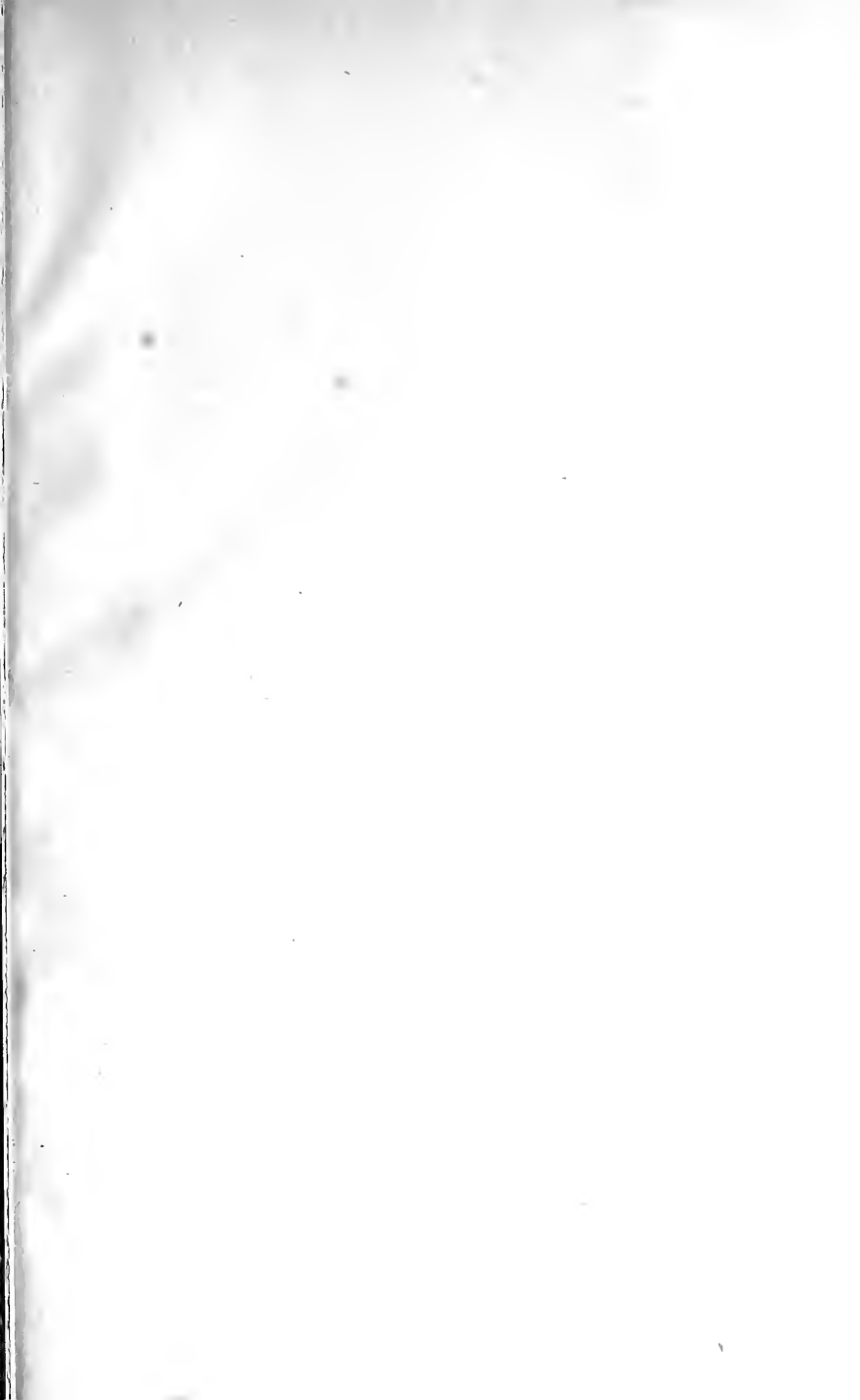
To illustrate all styles of sleeves would be too expensive as hundreds of styles come out every year. We illustrate the lining which is the foundation of all sleeves. This sleeve has been tried and found to be the best and easy to draft. The under piece can be increased or decreased by dotting farther or nearer on each side of D and J. Then K to L may be increased or decreased, but whatever you make K to L the balance of your arm-hole measure + 1 inch will be K to M. But $\frac{2}{3}$ your arm-hole measure is the usual rule, but you can vary as much as you like as long as you observe the rule to add to one what you take off the other. If you have a good fitting lining for sleeve or body you can use any draping that may become fashionable as this is the foundation of the dress. All good draping depends on the lining to hold it in place. If your lining is a misfit you cannot correct it by good draping. So in drafting always retain your original draft as you cannot measure twice alike on any one person. So if you get a perfect fit for a customer you can duplicate it from your original draft as often as you wish. Or should you have a slight mistake you can correct it on your original draft and not make the second mistake for the same customer. Some systems claim to cut from measures drafted on the goods, but if you make a misfit you have no way to guard against repeating the same mistake with the same customer.

Great care should be taken in measuring. To measure waist, measure very tight, as the waist has all the seams to cross, and will get two large if made with a moderate tight measure. It is a very good plan to take $\frac{1}{2}$ to 1 inch less waist, as the waist will have to stand some strain. The bust should not be taken so tight, or it will be binding over the chest. The hip measure should be very loose or your

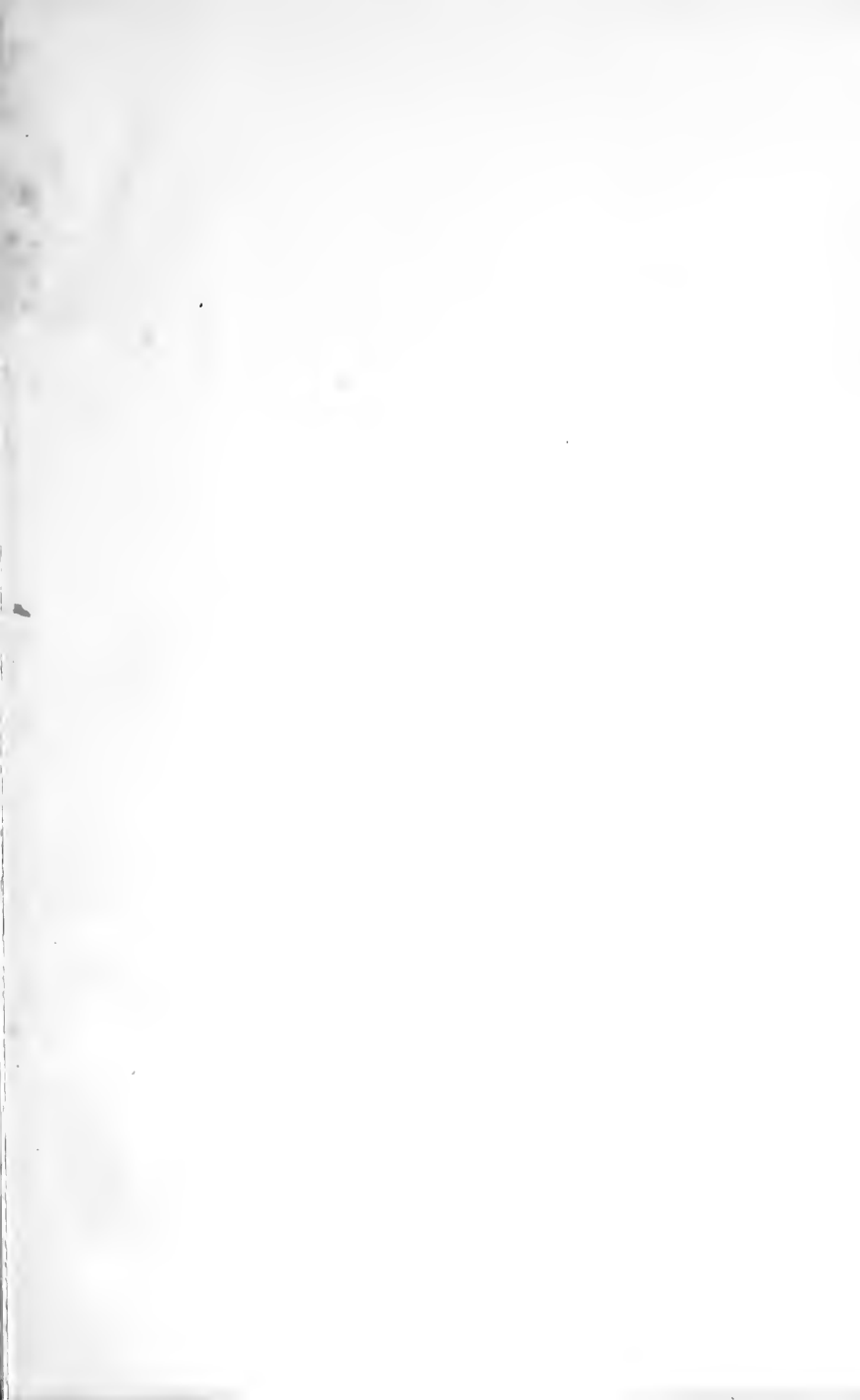
waist will wrinkle at under arm and side body. The neck should be measured very correct but not too tight. The collar can also be measured by the pattern of waist as this system makes no mistakes in cutting the neck. Persons with a very sway back should have a slight curve taken out of back seam from 3 inches above waist to 2 inches below the waist. Bony persons sometimes require slight curve on back at the neck. Very large persons sometimes require two under arm pieces to reduce the width of the side body and under arm pieces. Persons over 34-inch waist may have two under arms as the side body and under arm look too plain. But this is a matter of taste.











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